Reviewer's report

Title: Will the age of peak ultra-marathon performance increase with increasing race duration?

Version: 1 Date: 16 August 2014

Reviewer: Tom W Bauer

Reviewer's report:

Major Revisions:
I recommend the authors check their use of Km and miles. For example, the work of Hoffman is described as 161 mile ultra-marathons, but in fact Hoffman studies 100 mile ultra-marathons (about 161 Km). I find at least 3 of these errors in the Discussion.

Discretionary Revisions:
In this manuscript the authors have used data of timed ultra-running events to investigate the hypothesis that the age of peak ultra-marathon performance increases with increasing race distance. The results showed maximum performance in the early 40’s for both men and women at most distances.

The analysis of data and the figures seem sound and will be of interest to some readers.

The authors may wish to consider the following comments:

1. Some of the text devoted to the results could be condensed since the data is well-displayed in the figures.

2. Importantly, the authors studies time-limited ultramarathons, races that are usually run on tracks or on track-like setting. The results may not apply to distance limited races, such as 50-mile and especially 100-mile ultra-marathons that are often on trails with significantly more elevation gain and loss than time-limited event. The top finishers in difficult 100-mile trail ultramarathons are now frequently in their 20’s.

3. The manuscript is relatively long. It could easily be reduced in length by deleting the text in the Discussion that simply repeats the Results. Similarly, the rather long text that speculates on the reasons for decreasing performance over age 50 seems out of place.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable
**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**
I declare that I have no competing interests.